White-Knight® Metal Primer

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Revision Date: 10/06/2014 Date of issue: 07/15/2015 Version: 1.0

SECTION 1: IDENTIFICATION

Product Identifier

Product Form: Mixture

Product Name: White Knight® Metal Primer

Product Code: 7841

Intended Use of the Product

Moisture cure polyurethane coating. For professional use only.

Name, Address, and Telephone of the Responsible Party

Manufacturer

The Garland Company, Inc.
3800 East 91st Street
Cleveland, Ohio 44105-2197
T-800-762-8225
F-216-641-0633
www.garlandco.com

Supplier

The Garland Company, Inc.
3800 East 91st Street
Cleveland, Ohio 44105-2197
T-800-762-8225
F-216-641-0633
www.garlandco.com

Emergency Telephone Number

Emergency number : 1-800-262-8200 (CHEMTREC)

SECTION 2: HAZARDS IDENTIFICATION

Classification of the Substance or Mixture

Classification (GHS-US)

Flam. Liq. 3	H226
Skin Irrit. 2	H315
Eye Irrit. 2B	H320
Acute Tox.	H332
Resp. Sens. 1	H334
STOT SE 3	H335
Asp. Tox. 1	H304
STOT RE 1	H372

Label Elements

GHS-US Labeling

Hazard Pictograms (GHS-US) :

Signal Word (GHS-US) : Danger

Hazard Statements (GHS-US) :

H226 - Flammable liquid and vapor
H304 - May be fatal if swallowed and enters airways
H315 - Causes skin irritation
H320 - Causes eye irritation
H332 - Harmful if inhaled
H334 - May cause allergy or asthma symptoms or breathing difficulties if inhaled
H335 - May cause respiratory irritation
H372 - Causes damage to organs through prolonged or repeated exposure by route of exposure if conclusively proven that no other route applies

Precautionary Statements (GHS-US) :

P260 - Do not breathe dust/fume/gas/mist/vapors/spray.
P270 - Do not eat, drink or smoke when using this product.
P280 - Wear protective gloves/protective clothing/eye protection/face protection.

P264 - Wash skin and face thoroughly after handling.
P285 - In case of inadequate ventilation wear respiratory protection.
P314 - Get Medical advice/attention if you feel unwell.
P302+352 - IF ON SKIN: Wash with soap and water.
P332+313 - If skin irritation occurs: Get medical advice/attention.
P304+340 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P342+311 - If experiencing respiratory symptoms, Call a POISON CENTER or doctor/physician.
P305+351+338 - IF IN EYES: Rinse continuously with water for several minutes. Remove contact lenses if present and easy to do.
Continue rinsing.
P337 - If eye irritation persists: Get medical attention
P362 - Take off contaminated clothing and wash before reuse.
P403+233 - Store in a well ventilated place. Keep container tightly closed.
P501 - Dispose of contents and container in accordance with existing federal, state, and local environmental control laws

Other Hazards

Other Hazards Not Contributing to the Classification: Exposure may aggravate those with pre-existing eye, skin, or respiratory conditions.

Unknown Acute Toxicity (GHS-US) Not available

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Mixture

Name	Product identifier	% (w/w)
4,4'-Methylenediphenyl diisocyanate	(CAS No) 101-68-8	5-15
Benzene, 1,1'-methylenebis[isocyanato-	(CAS No) 26447-40-5	0.1-5
Solvent naphtha, petroleum, light arom.	(CAS No) 64742-95-6	25-50
Aluminum	(CAS No) 7429-90-5	10-20
Polymeric based MDI		30-40

SECTION 4: FIRST AID MEASURES

Description of First Aid Measures

General: Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label if possible).

Inhalation: Remove to fresh air. Administer oxygen or artificial respiration as needed. Obtain medical attention. Asthmatic-type symptoms may develop and may be immediate or delayed up to several hours. Consult a physician should this occur.

Skin Contact: Remove contaminated clothing. Wash skin thoroughly with water and soap. Wash contaminated clothing before reuse. Seek medical attention if irritation develops or persists.

Eye Contact: Flush with copious amounts of lukewarm water for a minimum of 15 minutes, while lifting eyelids. Contact eye physician for immediate follow up.

Ingestion: Do not induce vomiting. Give 1 to 2 cups of milk or water to drink. Do not give anything by mouth to an unconscious or convulsing person. Consult a physician.

SECTION 5: FIRE-FIGHTING MEASURES

Flammability: Flammable
Flash Point: 107F
LEL: 0.9%
UEL: 7.0%
Flash Point Method: TCC

Extinguishing Media:

Dry chemical (e.g. monoammonium, phosphate, potassium sulfate, and potassium chloride), carbon dioxide, high expansion (proteinic) chemical foam. Special Fire Fighting Procedures : Full emergency equipment with self-contained breathing apparatus and full protective clothing should be worn by fire fighters. During a fire, MDI vapors and other irritating, highly toxic gases may be generated by thermal decomposition or combustion (see Section VII). At temperatures greater than 400 F. (204 C.), polymeric MDI can polymerize and decompose which can cause pressure build up in closed containers. Explosive rupture is possible. Do not use water, water may react with aluminum to form hydrogen gas.

Reference to Other Sections

Refer to section 9 for flammability properties.

SECTION 6: ACCIDENTAL RELEASE MEASURES

If material is spilled: Evacuate nonessential personnel. Ventilate area. Control further spillage if feasible. Notify appropriate authorities if necessary. Equip cleanup crew with appropriate protective equipment (see Section VI). Dike or impound spilled material. Cover the spill with sawdust, vermiculite, fuller's earth or other absorbent material. Shovel into suitable unsealed containers and transport to well-ventilated area (outside). Cover loosely.

Waste Disposal Method - Waste must be disposed of in accordance with federal, state, and local environmental control regulations. Incineration is preferred method. Empty containers must be handled with care due to product residue. Do not heat or cut empty container with electric or gas torch. (See Sections IV and VII). Gases may be highly toxic.

Reference to Other Sections

See Heading 8. Exposure controls and personal protection.

SECTION 7: HANDLING AND STORAGE

Handling Precautions:

Avoid contact with skin and eyes. Do not breathe vapor. Warning properties (irritation of the eyes, nose and throat or odor) are not adequate to prevent chronic overexposure from inhalation. This material can produce asthmatic sensitization upon either single inhalation exposure to a relatively high concentration or upon repeated inhalation exposures to lower concentrations. Exposure to vapors of heated MDI can be extremely dangerous. Employee education and training in the safe use and handling of this product are required under the OSHA Hazard Communication Standard.

Storage Requirements:

Storage Temperature (min/max).....32° F. (0° C.)/122° F. (50° C.)
Shelf Life..... 24 months at 77° F. when stored in a sealed container.

Special Sensitivity: If container is exposed to high heat, it can be pressurized and possibly rupture explosively. MDI reacts with water to form CO2 gas. This can cause sealed containers to expand and possibly rupture explosively.
Storage Precautions: Store in tightly closed containers to prevent moisture contamination. Do not reseal if contamination is suspected.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Controls

Ventilation Requirements... Exhaust ventilation sufficient to keep the airborne concentrations of MDI and solvent below the respective TLV to be utilized. Standard reference sources regarding industrial ventilation (i.e. ACGIH industrial ventilation) should be consulted for guidance about adequate ventilation.

Additional Protective Measures... Safety showers and eyewash stations should be available. Educate and train employees in safe use of product. Follow all label instructions.

Personal Protective Equipment
Eye Protection Requirements: Liquid chemical goggles. Vapor resistant goggles should be worn when contact lenses are in use. In a splash hazard environment chemical goggles should be worn along with a full face shield.

Skin Protection Requirements: Permeation resistant gloves (butyl rubber, nitrile rubber, polyvinyl alcohol). However, please note that PVA degrades in water. Cover as much of the exposed skin area as possible with appropriate clothing. If skin creams are used, keep the area covered by the cream to a minimum.

Respiratory Requirements: Concentrations greater than TLV can occur when MDI is sprayed, heated or used in poorly ventilated areas. In such case, or whenever concentrations of MDI exceed the TLV, respiratory protection must be worn. A positive pressure, supplied air-respirator or self-contained breathing apparatus is recommended. In situations where MDI is not sprayed, heated or used in a poorly ventilated area, and a supplied air or self-contained breathing apparatus is unavailable or its use impractical, at least an air-purifying respirator equipped with an organic vapor cartridge and particulate pre-filters must be worn. However, this should be permitted only for short periods of time at relatively low concentrations (at or below the TLV). However, due to the poor warning properties of MDI, proper fit and timely replacement of filter elements must be ensured. Observe OSHA regulations for respirator use (29 CFR 1910.134).

4,4'-Diphenylmethane Diisocyanate (MDI): OSHA: .020 ppm ceiling-PEL
.200 mg/m3 ceiling
ACGIH: .005 ppm TWA
.051 mg/m3 TWA

Aromatics 100: OSHA: 50 ppm(245 mg/m3) TLV for 8 hour workday
Aluminum: Manufacturer recommended 10 mg/m3 TLV

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Information on Basic Physical and Chemical Properties

Physical State	:	Liquid
Appearance	:	Metallic aluminum color
Odor	:	Solvent odor
Vapor Pressure	:	Less than 10mm Hg @ 25C
Specific Gravity	:	1.12 g/ml
Solubility	:	Insoluble/reacts slowly with water to liberate
VOC	:	3.4 lbs./gal. (407 g/L)

SECTION 10: STABILITY AND REACTIVITY

Stability: Stable under normal conditions
Conditions to Avoid: Avoid contact with water.
Materials to Avoid: Water may react to form carbon dioxide. Avoid contact with water. Also avoid amines, strong bases, alcohols.
Hazardous Decomposition: By heat and fire: carbon dioxide, carbon monoxide, oxides of nitrogen, traces of HCN and MDI.
Hazardous Polymerization: May occur. Contact with moisture and other materials which react with isocyanates or temperatures over 400° F. (204 C.) may cause polymerization.

SECTION 11: TOXICOLOGICAL INFORMATION

Toxicity Data for: Diphenylmethane Diisocyanate (Monomeric and Polymeric

Acute Toxicity

Oral LD50……..:Greater than 15,800 mg/kg (Rat)

Dermal LD50……..:Greater 5010 but less than 7,940 mg/kg (Rabbit)

Inhalation LC50……..:The 4-hour LC50 for polymeric MDI in rats ranges from 370 to 490 mg/m3. The LC50 for monomeric MDI was estimated to be between 172 and 187 mg/m3.

Eye Effects……..:Slight to moderate irritation.

Skin Effect……..:Slight to moderate irritation.

Sensitization……:MDI has been shown to produce dermal sensitization in laboratory animals. Evidence of respiratory sensitization has also been observed in guinea pigs. In addition, there is some evidence suggestive of cross-sensitization between different types of diisocyanates.

Chronic Toxicity: In a combined chronic inhalation toxicity/oncogenicity study, rats were exposed to an aerosol of polymeric MDI for 6 hours per day, 5 days per week for one or two years. The exposure concentrations were 0, 0.2, 1.0 and 6.0 mg/m3. Microscopic examination of tissues revealed the effects of irritation to the nasal cavity and lungs in animals exposed to 1.0 and 6.0 mg/m3. The No Observable Effect Level (NOEL) was 0.2 mg/m3.

Carcinogenicity: In the study described above (See Chronic Toxicity), the occurrence of pulmonary adenomas and a single pulmonary adenocarcinoma was considered to be related to MDI. These tumors were observed only in rats exposed to the high concentration of 6.0 mg/m3.

Mutagenicity: MDI has been reported by NIOSH to be mutagenic to samonella typhemurium bacteria in the presence of a mammalian activating system. Recent work done by M. Anderson, at the Danish School or Pharmacy in Health, also shows a positive result for Desmodur E 21. There is not full agreement in the scientific community on the significance of these Ames test results and their relationship to human safety in the risk of cancer in man.

Developmental Toxicity: Rats were exposed to polymeric MDI at air concentrations of 0, 1, 4 and 12 mg/m3 during days 6-15 of gestation.

Maternal Toxicity (including mortality) was observed at the highest concentration of 12 mg/m3 accompanied by embryo and fetal toxicity. However, no teratogenic effects were observed even at this lethal concentration. Other Toxicity Data: No conclusive evidence has been developed to indicate that either MDI for Desmodur E 21 is carcinogenic, teratogenic or that it cause reproductive effects in animals or in humans.

SECTION 12: ECOLOGICAL INFORMATION

Ecotoxicity data based on polymeric MDI (a mixture of monomers and higher molecular weight oligomers).

Biodegradation

0 %, Exposure time: 28 d, i.e. not degradable

Bioaccumulation

Oncorhynchus mykiss (rainbow trout), Exposure time: 112 d, < 1 BCF

Does not bioaccumulate.

Acute and Prolonged Toxicity to Fish

LC50: > 100 mg/l (Danio rerio (zebra fish), 96 h)

Studies of a comparable product.

Acute Toxicity to Aquatic Invertebrates

EC50: 83 mg/l (Daphnia magna (Water flea), 48 h)

Studies of a comparable product.

Toxicity to Aquatic Plants

ErC50: > 100 mg/l, (Desmodesmus subspicatus (Green algae),72 h)

Studies of a comparable product.

Toxicity to Microorganisms

EC50: > 100 mg/l, (activated sludge, 3 h)

Ecological Data for 4,4'-Diphenylmethane Diisocyanate (MDI)

Acute and Prolonged Toxicity to Fish

LC50: > 500 mg/l (Zebra fish (Brachydanio rerio), 24 h)

Acute Toxicity to Aquatic Invertebrates

EC50: > 500 mg/l (Water flea (Daphnia magna), 24 h)

SECTION 13: DISPOSAL CONSIDERATIONS

Waste Disposal Method:

Waste disposal should be in accordance with existing federal, state and local environmental control laws. Incineration is the preferred method.

Empty Container Precautions:

Empty containers retain product residue; observe all precautions for product. Do not heat or cut empty container with electric or gas torch because highly toxic vapors and gases are formed. Do not reuse without thorough commercial cleaning and reconditioning. If container is to be disposed, ensure all product residues are removed prior to disposal.

SECTION 14: TRANSPORT INFORMATION

14.1 In Accordance with DOT

Proper Shipping Name : Paint: Non-regulated for surface transportation (no hazard label required for surface transportation via motor freight).

Hazard Class : 3

Identification Number : UN1263

Label Codes :

Packing Group : III

ERG Number :

14.2 In Accordance with IMDG

Proper Shipping Name : Paint

Hazard Class : 3

Identification Number : UN1263

Packing Group : III

Label Codes : 3

EmS-No. (Fire) : F-E

EmS-No. (Spillage) : S-E

MFAG Number : 127;128

14.3 In Accordance with IATA

Proper Shipping Name : Paint

Packing Group : III

Identification Number : UN1263

Hazard Class : 3

Label Codes : 3

ERG Code (IATA) : 3L

14.4 In Accordance with TDG

Proper Shipping Name : Paint

Packing Group : I

Hazard Class : 3

Identification Number : UN1263

Label Codes : 3

SECTION 15: REGULATORY INFORMATION

International Inventories

Chemical Name	TSCA	DSL	NDSL	EINECS	ELINCS	ENCS	CHINA	KECL	PICCS	AICS
4,4' Diphenylmethane Diisocyanate (MDI)	X	X	-	X	-	X	X	X	X	X
Methylenediphenyl diisocyanate	X	X	-	X	-	X	X	X	X	X
Aromatic solvent	X	X	-	X	-	-	X	X	X	X
Aluminum	X	X	-	X	-	-	X	X	X	X
Polyisocyanate based MDI	X	X	X	X	X	X	X	X	X	X

TSCA	Complies
DSL	Complies
NDSL	Complies
EINECS	Complies
ELINCS	Complies
ENCS	Complies
CHINA	Complies
KECL	Complies
PICCS	Complies
AICS	Complies

Federal Regulations

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40n of the Code of Federal Regulations, Part 372.

Chemical Name	SARA 313 - Threshold Values
4,4’ Diphenylmethane Diisocyanate (MDI) (CAS #: 101-68-8)	1.0%
Aluminum (CAS #: 7429-90-5)	1.0%

Clean Air Act, Section 112 Hazardous Air Pollutants (HAPs) (see 40 CFR 61)

This product does not contain any HAPs.

Chemical Name

4,4’ Diphenylmethane Diisocyanate (MDI) (CAS #: 101-68-8)

State Regulations

California Proposition 65

This product does not contain any Proposition 65 chemicals.

State Right-to-Know

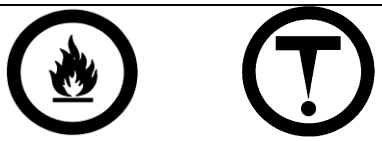
Chemical Name	Massachusetts	New Jersey	Pennsylvania	Illinois	Rhode Island
4,4’ Diphenylmethane Diisocyanate (MDI)	X	X	X	X	X
Aluminum	X	X	X		X

Canada

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR.

Chemical Name	NPRI
Aluminum	X

White Knight® Metal Primer	
WHMIS Classification	Class B Division 2 - Flammable Liquid Class D Division 2 Subdivision A - Very toxic material causing other toxic effects



This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the SDS contains all of the information required by CPR.

SECTION 16: OTHER INFORMATION, INCLUDING DATE OF PREPARATION OR LAST REVISION

Revision date : 07/21/2015

Other Information : This document has been prepared in accordance with the SDS requirements of the OSHA Hazard Communication Standard 29 CFR 1910.1200.

Party Responsible for the Preparation of This Document

The Garland Company, Inc.
3800 East 91st Street
Cleveland, Ohio 44105-2197
T-800-762-8225

This information is based on our knowledge as of the Revision Date and is intended to describe the product only for the purposes of health, safety, and environmental requirements as of the Revision Date. It should not therefore be construed as guaranteeing any specific property of the product nor as providing any warranty, expressed or implied. The user assumes all responsibility, liability, risk of loss, damage, or expense arising out of, or in any way connected with, the handling, storage, use, or disposal of the product.

North America GHS US 2015 & WHMIS